

PATENT APPLICATION

**RESPONSE UNDER 37 CFR §1.116
EXPEDITED PROCEDURE
TECHNOLOGY CENTER ART UNIT 2613**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Kiichi UEYANAGI et al.

Group Art Unit: 2613

Application No.: 10/784,869

Examiner: W. LEUNG

Filed: February 24, 2004

Docket No.: 118826

For: WIRELESS OPTICAL SYSTEM

REQUEST FOR RECONSIDERATION AFTER FINAL REJECTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the January 10, 2008 Office Action, please consider the following remarks.

Claims 1-45 and 47 are pending.

The Office Action rejects under 35 U.S.C. §103(a) claims 1-6, 14-16, 23-25 and 32-35 over Andreu-von Euw et al. (Euw) (U.S. Patent No. 7,120,363) in view of Dunskey et al. (U.S. Patent Application Publication No. 2003/0213787); claims 26, 30, 31 and 45 over Goodwill (U.S. Patent No. 6,775,480) in view of Dunskey; claims 7-9 and 36-38 over Euw in view of Dunskey and further in view of Graves et al. (U.S. Patent No. 6,721,510); claims 39-42 over Euw in view of Dunskey and further in view of Javitt et al. (U.S. Patent No. 6,381,055); claims 10, 11, 17-19, 43 and 44 over Euw in view of Dunskey and further in view of Goodwill*;

* While the Office Action did not name claims 17-19, the rejection discussion addresses these claims.

claims 20-22 over Euw in view of Dunskey and further in view of Mun (U.S. Patent No. 5,663,944); claim 47 over Goodwill in view of Dunskey and further in view of Euw; and claims 27-29 over Goodwill in view of Dunskey and further in view of Javitt. These rejections are respectfully traversed.

The Office Action admits that Euw does not disclose scanning means that scans the light-emitting element relative to a transmission light condenser lens, but asserts that Dunskey supplies the subject matter missing in Euw and that one of ordinary skill in the art would have combined Dunskey with Euw "to enhance alignment accuracy." However, Applicants respectfully submit that Dunskey does not disclose or suggest scanning a light-emitting element or a light-detecting element relative to a transmission or receiving light condensing lens, respectively.

The Office Action cites Fig. 4a and element 78 of Dunskey as evidence of disclosure of a scanning means for scanning a light-emitting element. However, Applicants respectfully submit that Dunskey does not disclose or suggest moving a light-emitting element or a light-detecting element. Rather, Dunskey discloses beam positioning system 74 that receives correlated aperture shaped pulses or beam output 72 and positions beam 72 to target position 82 by moving translation stage positioner 76 having a Y stage that supports and moves the workpiece 22 and an X stage that supports and moves fast positioner 78 and objective lens 80. See paragraph [0048]. Thus, Dunskey does not disclose or suggest moving a light-emitting element such as laser 52 relative to a transmission condenser lens and Dunskey does not disclose a light-detecting element at all.

Further, claims 1, 3, 26 and 45 recites scanning means which scans said light-emitting element and claim 2 recites scanning means which scans said light-detecting element. As discussed in MPEP §2181 (page 2100-235) these limitations are means-plus-function limitations and should be construed under 35 U.S.C. §112, sixth paragraph, to require the

structures disclosed in the specification that performs the recited function. The specification on page 15, lines 23-page 16, line 13 and page 18, line 23-page 19, line 8, for example, discloses the structures shown in Figs. 3 and 5 for light-emitting element and light-detecting element embodiments. In Fig. 3, the light-emitting element 18 is disposed in the vicinity of the position of a focal point of a condenser lens 17 and the holder section 115 is provided on a part of substrate 12 that retains the condenser lens 17 in relation to the light-emitting element 18. Dunskey does not disclose or suggest anything even close to this structure. Thus, Dunskey does not disclose or suggest the scanning means recited in claims 1-3, 26 and 45.

Still further, the Office Action asserts that one of ordinary skill in the art would have improved Euw's system using Dunskey's teaching to yield predictable results and that Dunskey's teaching is capable of enhancing performance of optical alignment accuracy. We disagree.

Euw is directed to maintaining optical alignment for free-space optical communication. As shown in Fig. 1, link heads 104 are positioned on structures such as buildings antennas, bridges, poles, houses or other large structures and that the free-space links 106 optically connect link heads 104. As one of ordinary skill in the art would have been well aware, the distances spanned by the free-links 106 are comparatively large relative to the via hole forming apparatus disclosed in Dunskey. Euw discloses at C7/L55-C8/L8, that link heads 552 and 554 include gimbols or optic cage 572 which may be position adjusted in both azimuth and elevation for alignment, *i.e.*, rotational movements. Gimbol or optics cage 572 may be moved by linear motors 584. Thus, as also shown in Figs. 4 and 5 and Fig. 9, link heads 462, 464, 532, 538 are moved an azimuth/elevation (angular movements) to position the beams for alignment.

In contrast, Dunskey discloses X, Y, Z movements for alignment. In fact, Dunskey contemplates translation stage positioner 76 would have been well known to one of ordinary skill in the integrated processing art to move fast positioner 78, lens 80 and target 82. In view

of the great differences between Euw and Dunsky's position adjusting techniques, it is difficult to imagine why of one of ordinary skill in the art would attempt any combination. Euw's link head is a relatively light structure that may be rotated in azimuth and elevation while Dunsky's stage is well known to be used for fine linear movements. However, combining Euw and Dunsky would have created many unpredictabilities and uncertainties without any apparent benefit for Euw's link head alignment problems. If Dunsky's stage replaces Euw's rotational movements, then Euw would be rendered non-operational because linear minute movements would not accommodate the large beam movements achieved by azimuth and elevations movements disclosed in Euw. If Dunsky's stage is incorporated in addition to Euw's rotational movements additional weight of the stage must be added with no apparent benefit. Accordingly, one of ordinary skill in the art would not have combined Euw with Dunsky because there is no reason for such a combination. Even if improperly combined, the minor adjustments that would have been provided by Dunsky would not have been useful in view of the beam width as shown in Figs. 4, 5 and 9 and the combination would have only rendered Euw less operable without any benefit.

Moreover, even if unreasonably assuming that Dunsky's apparatus is installed in Euw's link head alignment system, such a system still would not have disclosed or suggested the scanning means recited in claims 1-3, 26 and 45 when properly construed in view of the specification. Thus, even if improperly combined, Euw and Dunsky would not have disclosed or suggested the subject matter recited in claims 1-3, 26 and 45.


As discussed in earlier responses, Goodwill discloses redundant clusters of transmitter/receivers to avoid alignment mechanics. See C2/L56-64. Thus, one of ordinary skill would not have combined Goodwill and Dunsky because of the teaching away. As discussed in prior responses, none of the other references, Javitt, Graves or Mun supply the subject matter lacking in Euw, Goodwill and Dunsky.

Claims 4, 7, 14, 17, 23, 32, 36 and 39 depend from claim 1; claims 5, 8, 10, 15, 18, 24, 34, 37, 41 and 43 depend from claim 2; claims 6, 9, 11-13, 16, 19, 22, 25, 33, 35, 38, 40, 42 and 44 depend from claim 3; claims 27-31 depend from claim 26 and claims 46 and 47 depend from claim 45. Thus, Euw, Dunskey, Goodwill, Graves, Javitt and Mun, individually or in combination, do not disclose or suggest the subject matter recited in claims 1-45 and 47. Withdrawal of the rejections of claims 1-45 and 47 under 35 U.S.C. §102 and/or §103 is respectfully solicited.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-45 and 47 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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